Draft Environmental Assessment

WESTERN MONTANA SHARP-TAILED GROUSE REINTRODUCTION

February 2019

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Chapter 1.0: Purpose and Need for Action

1.1 Background

Although STGR are classified as an upland game bird in Montana, there has been no hunting season in the western part of the state since 1948. Since 1984 restoration and conservation of STGR in western Montana has remained an FWP priority. Populations west of the Continental Divide were believed to be extirpated by the mid-2000s. FWP and partners interested in restoring STGR to western Montana completed an assessment of habitat quality in 2015. They found large areas of habitat in the Blackfoot, Clark Fork, and Bitterroot valleys equivalent to that available within the bird's range in north central Montana. If past habitat changes caused the original declines then the conditions have recovered sufficiently to now support populations. If other factors caused past declines, then monitoring of transplanted birds is the only way to identify current limiting factors.

Anderson et al. (2018) found habitat quality in the proposed reintroduction areas was comparable to some of the best habitat containing healthy STGR populations in FWP Region 4. For nesting habitat suitability, the Blackfoot Valley scored higher than the occupied sites, while the northern Bitterroot Valley scored as high or higher. The Drummond area scored the lowest for nesting habitat suitability, but was within range of variation of the occupied sites. For brood-rearing habitat suitability the Blackfoot Valley and the Drummond area scored high. The northern Bitterroot Valley scored the lowest of the three proposed reintroduction sites. Based on small sample sizes for winter habitat suitability, the Blackfoot Valley scored higher than two of occupied sites in Montana Fish, Wildlife & Parks (FWP) Region 4. The northern Bitterroot Valley and the Drummond area were within the range of variation of the remaining two occupied sites for winter habitat suitability. Milligan et al. (2018) modeled population viability based on average survival and reproductive rates for STGR in the published literature. Their assessment indicated that long-range population viability was questionable without additional management actions to improve survival and reproductive rates. They also suggested that site specific information from translocated birds could be used to help inform decision on the need for additional actions. If any such actions are warranted, FWP would considering pursuing those actions subject to addition environmental review.

1.2 Proposed Action

Montana Fish, Wildlife & Parks proposes to re-establish self-sustaining sharp-tailed grouse (STGR) populations west of the Continental Divide by reintroductions of grouse in 1-3 core areas identified to have the most suitable habitat; the Blackfoot Valley, the northern Bitterroot Valley, and/or the Drummond Area. FWP would capture approximately 75-180 STGR each year

for 5 years across Regions 4, 5, 6, and 7. Capture locations would be dispersed in a way as to minimize impact to source populations. FWP will also monitor survival and reproductive rates of the translocated STGR.

1.3 Need for Action

STGR are a priority for FWP's Wildlife Mitigation Program which was established to mitigate for the losses of wildlife habitat and populations caused by Libby Dam. FWP's SWAP identified the current state of STGR west of the continental divide as "isolated and extremely small," but in reality, they are now likely extinct. Two conservation actions identified in the SWAP Plan are to 1) "evaluate potential for STGR reintroduction" and 2) "increase abundance and distribution of STGR with a reintroduction program to western Montana." Specific direction is also provided in the 1984 Mitigation Plan for Libby Dam (Mundinger and Yde 1984), the 1987 Northwest Power and Conservation Council Fish and Wildlife Program (Northwest Power and Planning Council 1987), the 1991 Columbian STGR Mitigation Implementation Plan for Western Montana (Wood 1991), and most recently the 2016 Wildlife Mitigation Operating Plan (Wood 2016), which prioritizes project funding for five areas including grasslands/STGR. STGR are the only bird species historically occurring in western Montana now absent from the region. With a genetic analysis completed in 2009 (Warheit and Dean 2009), a habitat assessment completed in 2015 (Anderson et al. in review), and a restoration plan completed in 2017 (McNew et al. 2017), FWP now must decide whether to proceed with STGR restoration in western Montana.

1.4 Objectives of the Action (desired outcomes and conditions)

Restore and maintain 1-3 populations of STGR in western Montana that have a 95% probability of persistence for 50 years.

1.5 Relevant Plans, EISs, EAs, Regulations, Authorities

- Wildlife and Wildlife Habitat Mitigation Plan-Libby Dam (Mundinger and Yde 1984)
- Council Fish & Wildlife Program (Northwest Power Planning Council 1987)
- Bonneville Power Administration Wildlife Settlement (1988)
- Columbian STGR Mitigation Implementation Plan for Western Montana (Wood 1991)
- Upland Game Bird Enhancement Program Strategic Plan (FWP 2011)
- Montana State Wildlife Action Plan (FWP 2015)
- Program for Mitigating Wildlife Impacts Resulting from Construction and Inundation caused by Libby and Hungry Horse Dam-Six Year Operating Plan (Wood 2016)
- Restoration Plan for STGR Recovery in Western Montana (McNew et al. 2017)

1.5 Decision That Must Be Made

The decision to be made is whether FWP should proceed with the reintroduction of STGR west of the Continental Divide in core areas identified to have the most suitable habitat. This EA analyzes the environmental consequences associated with implementing the 5 alternatives and will determine whether any alternative action would result in an effect significant enough to trigger the need for an Environmental Impact Statement (EIS). If an EIS is not required, a Decision Notice will document the decision and rationale.

1.6 Applicable Permits, Licenses, and other Consultation Requirements

- FWP Scientific Collectors Permit
- Approval of animal capture, handling, and care protocols will be acquired from an approved Institutional Animal Care and Use Committee (IACUC)
- Bureau of Land Management (BLM) Letter of Authorization to use BLM land for capture
- Department of Natural Resources and Conservation (DNRC) Letter of Authorization to use state school trust land for capture

Chapter 2.0: Alternatives Including the Proposed Action

2.1 Introduction

STGR are a species where males gather at specific locations known as leks to compete for breeding with visiting females. FWP would use leks in FWP Regions 4, 5, 6, and 7 as sources to establish up to three populations of STGR in western Montana. Reintroduction areas were identified based on a habitat assessment completed in 2015. Capture and reintroduction efforts could begin as early as fall 2019 and would continue for up to 5 years within a 10-year period following the initial release. The time frame will depend on the success of the reintroduction(s) and/or accessibility to source populations. Intensive monitoring would begin in the first year and continue for at least 5 years with long-term monitoring continuing afterwards.

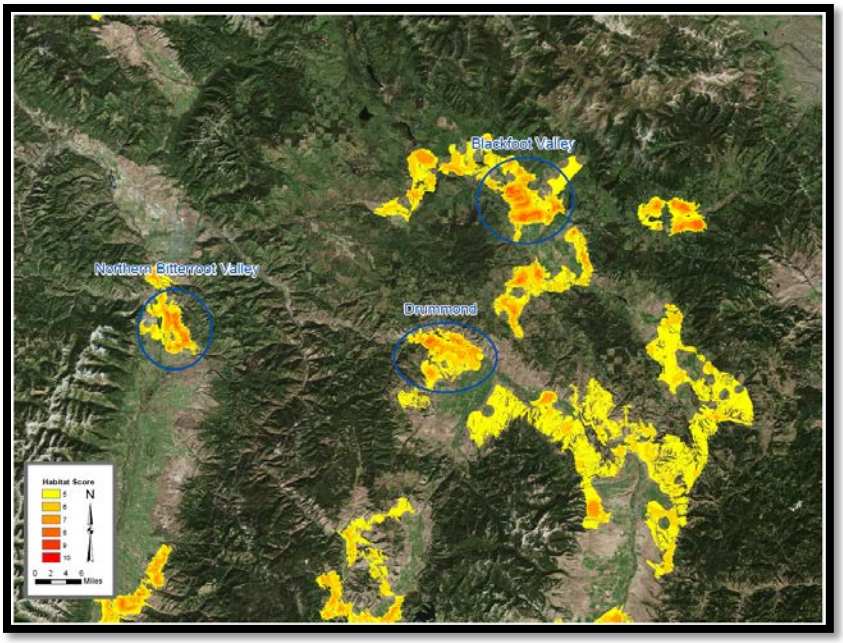

Figure 1. *Map of proposed reintroduction areas identified by 2015 habitat assessment.*

2.2 Process Used to Develop the Alternatives

2.2.1 History and Development Process of the Alternatives

Management of STGR have remained an FWP priority for 34 years dating back to the Libby Mitigation Plan (Mundinger and Yde 1984) which quantified habitat and wildlife losses after the creation of Koocanusa Reservoir. Attempts to augment a population of STGR in the Tobacco Plains of northwest Montana with Columbian STGR were unsuccessful in the early and mid-1990s (Young and Wood 2012). A genetic analysis in 2009 determined that all STGR populations sampled from western Montana were of the plains subspecies (Figure 2-Warheit and Dean 2009). FWP and a number of other partners recently completed an evaluation of potential STGR habitat in western Montana (Anderson et. al. in review). The objective was to compare habitat variables important to STGR population survival in occupied areas east of the continental Divide to those in unoccupied areas west of the Divide to determine if suitable habitat exists for a potential reintroduction effort in western Montana. Results indicated that suitable habitat existed west of the Divide for the reintroduction of STGR (Figure 3). A restoration plan (McNew et. al. 2017) examined feasibility of the project with a population viability analysis (PVA) that incorporated detailed management scenarios. Two scenarios generated 95% probability of minimum viable populations persisting for at least 50 years.

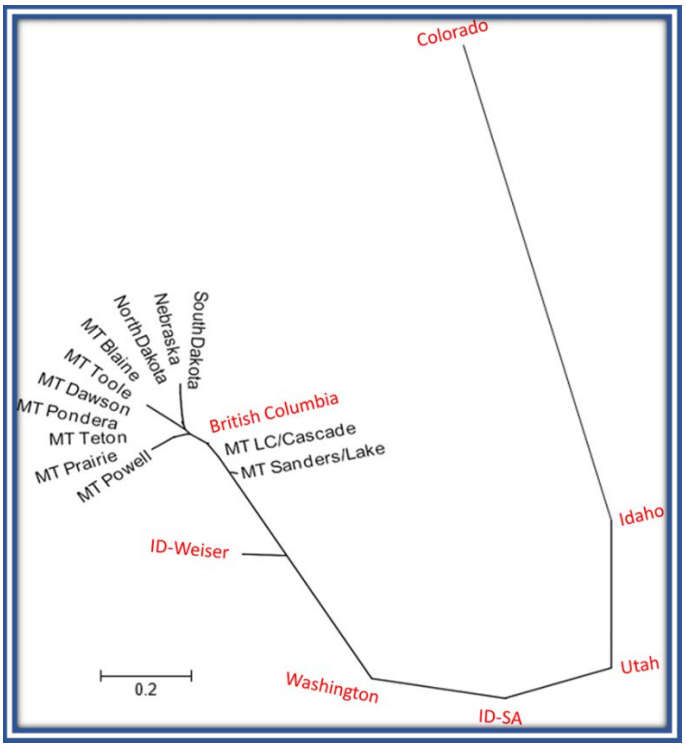

Figure 2. *Genetic distance using unrooted neighbor-joining tree where longer lines represent greater genetic distance (from Warheit and Dean 2009). Montana populations begin with the abbreviation MT. Populations in black are plains STGR and populations in red are Columbian STGR.*

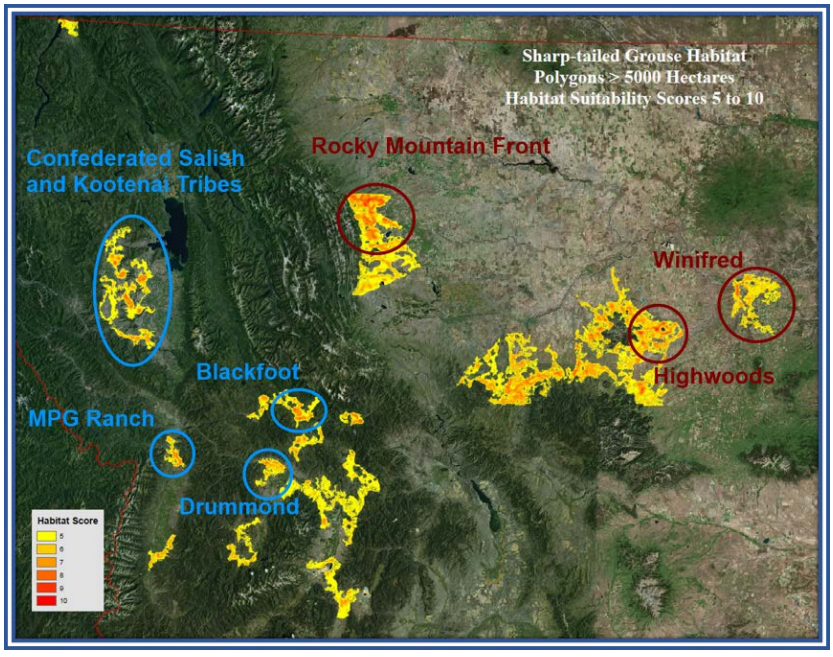

Figure 3. *Study sites with habitat suitability scores > 5 and > 5,000 ha. Blue indicates unoccupied while red indicates occupied sites.*

2.2.2 Alternatives Eliminated from Detailed Study

Although the Tobacco Plains Area (Figure 4) had population augmentation in the past (Wood 1991, Young and Wood 2012), the area no longer had habitat to sustain a minimum viable population and was eliminated as an alternative. The Confederated Salish & Kootenai Tribes have collaborated on the project from the beginning as STGR are of cultural significance to the tribes. However, the Flathead Indian Reservation had the lowest habitat suitability of all western Montana sites suggesting those sites were not currently adequate to support reintroduction and so were removed as an alternative (Figure 4).

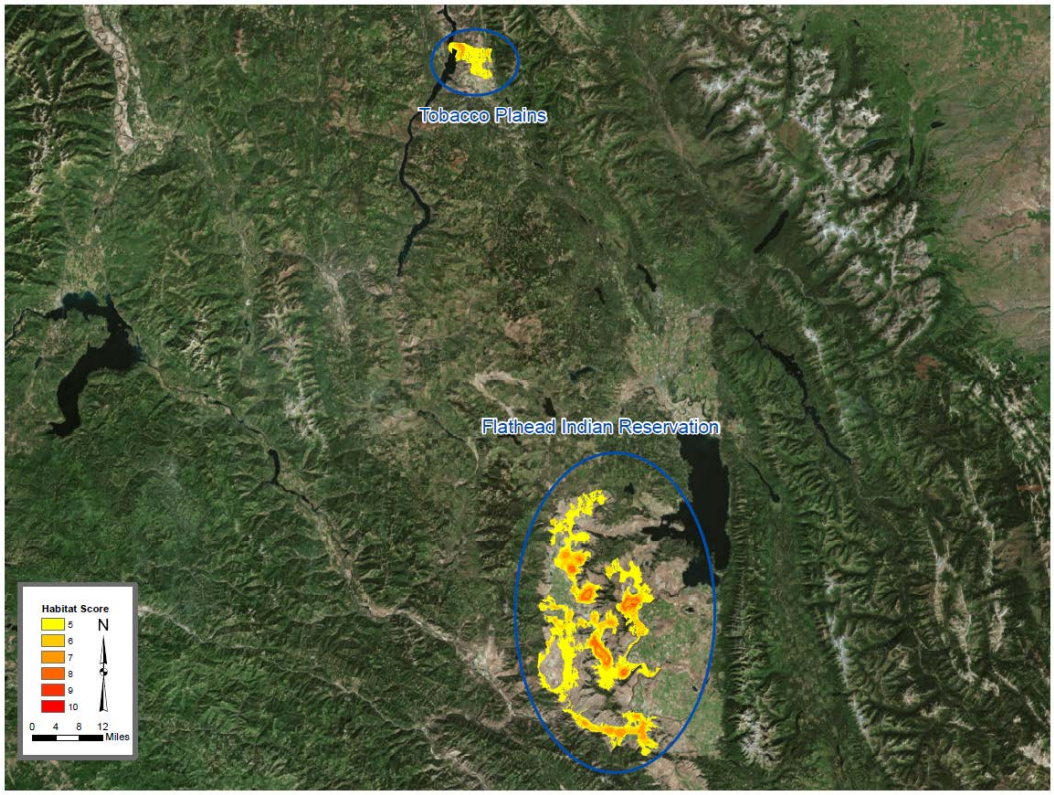

Figure 4. *Map of alternative areas eliminated from detailed study.*

2.3 Description of Alternatives

The EA evaluates 5 alternatives. These include Alternative A, the *No Action Alternative* (Section 2.3.1); Alternative B, *Reintroduce STGR to the Blackfoot Valley, Northern Bitterroot Valley, and the Drummond Area* (Section 2.3.2); Alternative C, *Reintroduce STGR to the Blackfoot Valley and the Northern Bitterroot Valley* (Section 2.3.3); Alternative D, *Reintroduce STGR to the Blackfoot Valley and the Drummond Area* (Section 2.3.4); and Alternative E, *Reintroduce STGR to the Blackfoot Valley* (Section 2.3.5).

2.3.1 Alternative A: No Action Alternative

No STGR would be captured from leks east of the Continental Divide and reintroduced into areas west of the Continental Divide. The environmental impacts and benefits as described in this EA (see Chapter 3) would not occur.

2.3.2 Alternative B: Reintroduce STGR to the Blackfoot Valley, Northern Bitterroot Valley, and Drummond Area

Alternative B would provide approximately 75-180 STGR per year for up to 5 years from sources in FWP Regions 4, 5, 6, and 7. Reintroduction would occur in the Blackfoot Valley, Northern Bitterroot Valley, and Drummond Area.

2.3.3 Alternative C: Reintroduce STGR to the Blackfoot Valley and the Northern Bitterroot Valley

Alternative C would provide 50-180 total STGR per year for up to 5 years from sources in FWP Regions 4, 5, 6, and 7. Reintroduction would occur in the Blackfoot Valley and Northern Bitterroot Valley.

2.3.4 Alternative D: Reintroduce STGR to the Blackfoot Valley and the Drummond Area

Alternative D would provide 50-180 total STGR per year for up to 5 years from sources in FWP Regions 4, 5, 6, and 7. Reintroduction would occur in the Blackfoot Valley and Drummond Area.

2.3.5 Alternative E: Reintroduce STGR to the Blackfoot Valley

Alternative E would provide 25-180 total STGR per year for up to five years from sources in FWP Regions 4, 5, 6, and 7. Reintroduction would occur only in the Blackfoot Valley.

Chapter 3.0: Affected Environment & Predicted Environmental Consequences

3.1 Introduction

Section 3 describes the physical, biological, and human resources that may be affected by the alternatives presented and their environmental effects on those resources. Affected environment and environmental consequences have been combined into one chapter.

3.2 Description of Relevant Pre-Existing Factors

3.2.1 Pre-Existing Factors in the Blackfoot Valley (from STGR Restoration Plan)

The Blackfoot Valley is one of the last known areas to support a population of STGR in western Montana. There have been no formal population surveys or searches since 2000, but three reliable but unverified observations of STGR have been reported by landowners and agency personnel since that time (A. Wood, FWP, personal communication). Past research examining STGR populations suggest that the Blackfoot Valley should be a primary focus in STGR recovery west of the Continental Divide (Deeble 1996, Fitzpatrick 2003). Further, of the potential restoration sites, the Blackfoot Valley has the most complete data on past STGR habitat use, lek counts and lek locations (Deeble 2000).

The 45,838-acre Blackfoot Valley restoration site is located within the upper Blackfoot River Watershed, near Ovando and Helmville. The majority of the reintroduction site is within Powell County, with a small portion occurring in Missoula County. The elevation ranges from a minimum of 3,996 ft to a maximum of 4,784 ft with a mean elevation of 4,219 ft. Average annual precipitation is 15.3 inches with a mean annual temperature of 40.5 °F and annual mean minimum and maximum temperatures of 26.2 °F and 54.9 °F, respectively (PRISM Climate Group 2016).

The vegetation in the Blackfoot reintroduction site is dominated by a shrub-steppe plant community with an estimated mean annual production of 1,067 lbs per acre that can range from 670 to 1,239 lbs per acre depending on the year (Natural Resources Conservation Service Soil Survey Staff 2016c). The vegetation consists primarily of mountain big sagebrush, Idaho fescue, rough fescue, bluebunch wheatgrass, arrowleaf balsamroot, western yarrow, and yellow salsify. Douglas fir, ponderosa pine, and Rocky Mountain juniper have invaded some areas likely due to fire suppression in the valley (Deeble 1996).

The Blackfoot Valley is transected by the north fork and main fork of the Blackfoot River as well as several streams, lakes, and wetlands. Approximately 15% of the vegetation in the upper Blackfoot Valley is comprised of riparian species (Fitzpatrick 2003). Riparian vegetation communities are generally comprised of black cottonwood, quaking aspen, birch, hawthorn, rose, snowberry, and willow.

The Blackfoot Valley reintroduction site is predominantly private land used for grazing cow/calf operations (36,582 acres). Large areas in the upper Blackfoot Valley have been converted to croplands, hay lands, exotic grass pastures, and grazed rangelands (Deeble 1996). Lands in the upper Blackfoot Valley are not a priority for CRP enrollment (Deeble 1996, M. Merrill, Farm Service Agency, personal communication). Public lands consist of state trust lands, FWP, Bureau of Land Management (BLM), U. S. Forest Service (USFS), and U. S. Fish and Wildlife Service (USFWS) lands (9,257 acres). The USFWS owned lands are managed as wildlife habitat, primarily for waterfowl production.

The Blackfoot Valley is home to a community-based conservation group, the Blackfoot Challenge, which has been identified as a national model for successful grassroots community conservation (Burnett 2013). The Blackfoot Challenge focuses on keeping working lands intact and preventing development and has helped to place over 90,000 acres in conservation easements. Conservation easements in the Blackfoot reintroduction site are managed primarily by the USFWS and the Montana Land Reliance, and account for 22,017 acres of private land in the Blackfoot reintroduction area. Conservation easements managed by USFWS restrict development but do not have grazing restrictions (K. Ertl, USFWS, personal communication).

Potential predators of STGR in the Blackfoot Valley include several carnivorous mammals including coyote, red fox, bobcat, mountain lion, raccoon, striped skunk, western spotted skunk, and several members of the weasel family, such as badger. Avian predators include falcons, hawks, owls, crows, ravens, and magpies.

3.2.2 Pre-Existing Factors in the Northern Bitterroot Valley

STGR were once common in the valleys of western Montana, including the Bitterroot Valley (Marks et al. 2016). The habitat suitability index model created by FWP concluded that this region has suitable habitat for STGR reintroduction (Anderson et al. 2018, in review).

The 21,273-acre Bitterroot Valley reintroduction site is located within the Bitterroot River Watershed near Florence and Lolo. Most of the reintroduction site is in Missoula County, with the southern portion entering Ravalli County. The elevation ranges from a minimum of 3,199 ft to a maximum of 5,400 ft, with an average of 3,622 ft. Average annual precipitation is 15.8 inches with a mean annual temperature of 44.6°F. The annual mean minimum and maximum temperatures are 31.1°F and 57.6°F, respectively (PRISM Climate Group 2016).

The vegetation at the site is dominated by introduced tame forage grass species and small remnant areas of native grass/shrub communities. Additionally, noxious weeds such as Dalmatian toadflax and spotted knapweed are present throughout the Bitterroot Valley. Mean annual production is 1,067 lbs per acre, with a minimum of 753 lbs per acre and maximum of 1,239 lbs per acre depending on the year (Natural Resources Conservation Service Soil Survey Staff 2016b). A field tour of the potential restoration site noted vegetation communities primarily consisting of crested wheatgrass, intermediate wheatgrass, cheatgrass, bluebunch wheatgrass, arrowleaf balsamroot, lupine, spotted knapweed, and wheat. Douglas fir, ponderosa pine, Rocky Mountain juniper, mountain mahogany, serviceberry, and chokecherry were also present, but were generally limited to small riparian draws and mid-mountain elevations. Large areas in the Bitterroot Valley have been converted to croplands, hay lands, exotic grass pastures, and grazed rangelands.

The Bitterroot Valley is transected by several streams and wetlands which drain into the Bitterroot River. Riparian vegetation communities are generally comprised of black cottonwood, quaking aspen, birch, hawthorn, rose, snowberry, and willow.

Potential predators of STGR in the Bitterroot Valley include several carnivorous mammals including coyote, red fox, bobcat, mountain lion, raccoon, striped skunk, western spotted skunk. Several members of the weasel family are also present, such as badger. Avian predators include falcons, hawks, owls, crows, ravens, and magpies.

The Bitterroot Valley site is dominated by private land (19,403 acres). The remaining 1,871 acres are public lands including state trust lands, FWP, county government, and Montana Department of Transportation (MDT). Conservation easements, that restrict future development, exist on 3,351 acres of private lands. The Bitterroot Valley has a mixture of working landscapes for agriculture, primarily cattle production, conservation for wildlife, and housing and industry development. Approximately 10,000 acres are managed for wildlife conservation at the MPG Ranch.

3.2.3 Pre-Existing Factors in the Drummond Area (from STGR Restoration Plan)

STGR were once common in the valleys of western Montana, however prior to 2000 populations disappeared (Marks et al. 2016). The Drummond reintroduction site is located in the Flint Creek Valley along the Clark Fork River Watershed, in Granite County. The habitat suitability index model concluded that this site has potential habitat

for STGR reintroduction (Anderson et al. 2018 in review).

The Drummond site and surrounding habitat encompasses 51,141 acres that are predominantly a working agriculture landscape focused on beef production. The elevation ranges from 3,747 ft to 5,600 ft with a mean elevation of 4,462 ft. Average annual precipitation is 14.3 inches with a mean annual temperature of 41.7°F and annual mean minimum and maximum temperatures of 28.2°F and 55.2°F, respectively (PRISM Climate Group 2016).

The vegetation in the Drummond reintroduction site is dominated by a shrub-steppe plant community with a mean annual production of 1,234 lbs per acre that can range from 805 to 1,576 lbs per acre depending on the year (Natural Resources Conservation Service Soil Survey Staff 2016a). The vegetation consists primarily of big sagebrush, Idaho fescue, and bluebunch wheatgrass. However, large areas in the Flint Creek Valley have been converted to croplands, hay lands, exotic grass pastures, and grazed rangelands. The Flint Creek Valley is transected by Flint Creek and several other streams and wetlands which drain into the Clark Fork River. Riparian vegetation communities are generally comprised of black cottonwood, quaking aspen, birch, hawthorn, rose, snowberry, and willow.

The Drummond site is primarily comprised of private lands (26,870 acres). Public lands account for 1,586 acres and are managed by Montana Department of Natural Resources and Conservation (DNRC), MDT, and the BLM. Private land conservation easements compose 2,446 acres, all of which are managed by the Five Valleys Land Trust and are focused on maintaining wildlife habitat on working farms and ranches.

Potential predators of STGR at the Drummond site include several carnivorous mammals including coyote, red fox, bobcat, raccoon, striped skunk, and western spotted skunk, and several members of the weasel family including badger. Avian predators include falcons, hawks, owls, crows, ravens, and magpies.

3.3 Relevant Resource #1- STGR Population Effects on Source Populations (from STGR Restoration Plan)

STGR are a lekking species where males gather at specific locations to compete for breeding with visiting females. At each lek, only a few dominant males do all the breeding annually, so each year the majority of males are surplus. There are currently 241 mapped STGR leks with at least 15 males from lek survey data across Montana (Figure 5). This data represents a minimum

estimate of STGR leks on the landscape. There are other leks that meet this criterion, but they are not included in this dataset. Only leks with at least 15 males will be considered as sources for reintroduction efforts as these leks are large enough to avoid deleterious effects of removals from the population and geographically diverse enough to provide genetic diversity and similar habitat structures to each of the proposed reintroduction sites.

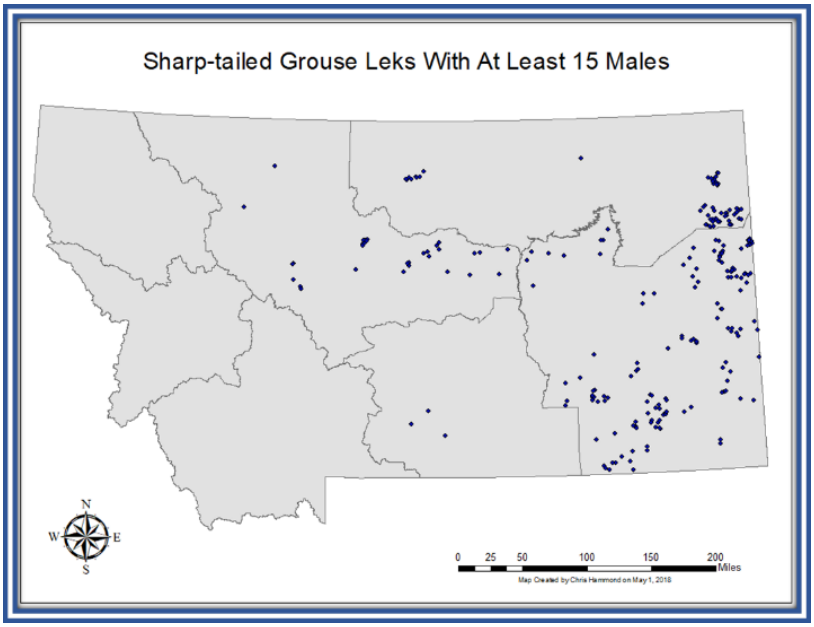

Figure 5. *Currently mapped STGR leks in Montana that meet requirements for source populations.*

3.3.1 Effects of Alternative A: No Action

- Direct Effects: Short-term reduction in the STGR population immediately surrounding the source leks would not occur. No potential population reductions due to the removal of STGR hens and their subsequent broods will occur.

- Indirect Effects: Disturbance on STGR leks would not occur. There will be no effect on the nesting success of hens being bred on those leks.

3.3.2 Effects of Alternative B: Reintroduction of STGR to the Blackfoot Valley, Northern Bitterroot Valley, and Drummond Area

- Direct Effects: During the initial fall of the restoration effort, FWP would remove 75 male STGR (providing 25 birds for each relocation site to establish leks the following spring) from leks with $\geq$ 15 males. No more than 30% of resident males will be removed

from any one lek. During each of the subsequent 4 springs, assuming favorable weather conditions, FWP would remove up to 180 STGR while maintaining a ratio of one male for every two females at each relocation site. We would prefer to move yearlings when possible and no more than 8 females will be removed from any one lek with ≥ 15 males. Capture efforts for females will focus on the 8 days after female lek attendance begins to maximize nesting at the relocation site.

- Indirect Effects: Increased disturbance on source leks will likely increase stress on non-captured hens and may reduce breeding success and subsequent nesting success of those hens. However, these effects are expected to be minimal and have no population level effects since we would only be capturing birds at a small fraction of all leks in central and eastern Montana.

3.3.3 Effects of Alternative C: Reintroduction of STGR to the Blackfoot Valley and the Northern Bitterroot Valley

- The initial fall of the restoration effort FWP would remove 50 male STGR (providing 25 birds for each relocation site to establish leks the following spring) from leks with ≥ 15 males. No more than 30% of resident males will be removed from any one lek. During each of the subsequent 4 springs, assuming favorable weather conditions, FWP would remove up to 180 STGR while maintaining a ratio of one male for every two females at each relocation site. We would prefer to move yearlings when possible and no more than 8 females will be removed from any one lek with ≥ 15 males. Capture efforts for females will focus on the 8 days after female lek attendance begins to maximize nesting at the relocation site.

- Indirect Effects: Increased disturbance on source leks will likely increase stress on non-captured hens and may reduce breeding success and subsequent nesting success of those hens. However, these effects are expected to be minimal and have no population level effects since we would only be capturing birds at a small fraction of all leks in central and eastern Montana.

3.3.4 Effects of Alternative D: Reintroduce STGR to the Blackfoot Valley and the Drummond Area

- The initial fall of the restoration effort FWP would remove 50 male STGR (providing 25 birds for each relocation site to establish leks the following spring) from leks with ≥ 15 males. No more than 30% of resident males will be removed from any one lek. During

each of the subsequent 4 springs, assuming favorable weather conditions, FWP would remove up to 180 STGR while maintaining a ratio of one male for every two females at each relocation site. We would prefer to move yearlings when possible and no more than 8 females will be removed from any one lek with ≥ 15 males. Capture efforts for females will focus on the 8 days after female lek attendance begins to maximize nesting at the relocation site.

- Indirect Effects: Increased disturbance on source leks will likely increase stress on non-captured hens and may reduce breeding success and subsequent nesting success of those hens. However, these effects are expected to be minimal and have no population level effects since we would only be capturing birds at a small fraction of all leks in central and eastern Montana.

3.3.5 Effects of Alternative E: Reintroduction of STGR to the Blackfoot Valley

- The initial fall of the restoration effort FWP would remove 25 male STGR from leks with ≥ 15 males so the birds can establish leks the following spring. No more than 30% of resident males will be removed from any one lek. During each of the subsequent 4 springs, assuming favorable weather conditions, FWP would remove up to 180 STGR while maintaining a ratio of one male for every two females. We would prefer to move yearlings when possible and no more than 8 females will be removed from any one lek with ≥ 15 males. Capture efforts for females will focus on the 8 days after female lek attendance begins to maximize nesting at the relocation site.

- Indirect Effects: Increased disturbance on source leks will likely increase stress on non-captured hens and may reduce breeding success and subsequent nesting success of those hens. However, these effects are expected to be minimal and have no population level effects since we would only be capturing birds at a small fraction of all leks in central and eastern Montana.

3.4 Relevant Resource #2- STGR Population Effects in Relocation Habitat

The STGR Restoration Plan (McNew et al. 2017) evaluated 10 different STGR restoration scenarios with a population viability analysis (PVA) focusing on specific management actions. Only two scenarios achieved the objective of this EA of a 95% probability of a STGR population persisting for at least 50 years. The first scenario included habitat management that improved nesting and wintering habitat by improving grazing practices and increasing shrub cover. Model results indicated that even at the smallest possible habitat area and minimum population size,

where the carry capacity was only 280 birds, the population increased by 23% per year. The second scenario included the habitat management component previously mentioned and a genetic rescue component that adds 10 STGR to the population every 10 year. This scenario takes into account the potential genetic diversity lost over time.

3.4.1 Effects of Alternative A: No Reintroduction

- Direct Effects: No reintroduction in western Montana would likely mean the species will remain extirpated.

- Indirect Effects: There would be no change in the population. No knowledge would be gained regarding the decline and extinction of STGR in western Montana.

3.4.2 Effects of Alternative B: Reintroduction of STGR to the Blackfoot Valley, Northern Bitterroot Valley, and Drummond Area

- Direct Effects: Successful reintroduction would result in new self-sustaining populations of STGR in the Blackfoot Valley, northern Bitterroot Valley, and the Drummond area. Population sizes will be limited by the amount of habitat available in each reintroduction area: estimates for Blackfoot Valley = 928 birds, northern Bitterroot Valley = 430 birds, and the Drummond area = 1035 birds. Information could be obtained about STGR ecology in western Montana and factors most influencing reintroduction success.

- Indirect Effects: With a Blackfoot Valley reintroduction, there is potential for population expansion south into the Helmville area. Such expansion would allow for at least an additional 600 birds. There is potential for connectivity between the Blackfoot and the Drummond population which would increase viability.

3.4.3 Effects of Alternative C: Reintroduction of STGR to the Blackfoot Valley and the Northern Bitterroot Valley

- Direct Effects: Successful reintroduction would result in new self-sustaining populations of STGR in the Blackfoot Valley and northern Bitterroot Valley. Population sizes will be limited by the amount of habitat available in each reintroduction area: estimates for Blackfoot Valley = 928 birds and the northern Bitterroot Valley = 430 birds. Some information could be obtained about STGR ecology in western Montana and factors most influencing reintroduction success.

- Indirect Effects: With a Blackfoot Valley reintroduction, there is potential for population expansion south into the Helmville area. Such expansion would allow for at least an additional 600 birds.

3.4.4 Effects of Alternative D: Reintroduce STGR to the Blackfoot Valley and the Drummond Area

- Direct Effects: Successful reintroduction would result in new self-sustaining populations of STGR in the Blackfoot Valley and the Drummond area. Population sizes will be limited by the amount of habitat available in each reintroduction area: estimates for Blackfoot Valley = 928 birds and the Drummond area = 1035 birds. Some information could be obtained about STGR ecology in western Montana and factors most influencing reintroduction success.

- Indirect Effects: With a Blackfoot Valley reintroduction, there is potential for population expansion south into the Helmville area. Such expansion would allow for at least an additional 600 birds. There is potential for connectivity between the Blackfoot and the Drummond population which would increase viability.

3.4.5 Effects of Alternative E: Reintroduction of STGR to the Blackfoot Valley

- Direct Effects: Successful reintroduction would result in new self-sustaining populations of STGR in the Blackfoot Valley. Population sizes will be limited by the amount of habitat available. The estimate for the Blackfoot Valley = 928 birds.

- Indirect Effects: With a Blackfoot Valley reintroduction, there is potential for population expansion south into the Helmville area. Such expansion would allow for at least an additional 600 birds.

3.5 Relevant Resources # 5- STGR Monitoring

Post-reintroduction monitoring is necessary to evaluate the ecological response of a restored or reintroduced species and the success of the program (Lake 2001). This STGR restoration project presents a unique opportunity to improve the knowledge base for future prairie-grouse reintroductions. We will establish two main monitoring efforts. First, short-term (5-year) monitoring of radio-marked STGR will allow us to estimate parameters of population performance (e.g., fecundity, survival), as well as assess seasonal habitat selection and evaluate movements away from release sites (World Pheasant Association and IUCN/Re-introduction

Specialist Group 2009). The demographic rates (fecundity, survival, etc.) specific to the reintroduced population we collect during this time will be used to fine tune site-specific population viability analyses required for adaptive management. Second, we will implement methods to monitor population trends and status over the long-term after population establishment (World Pheasant Association and IUCN/Re-introduction Specialist Group 2009). Both aspects are necessary to validate the reintroduction effort and assess the causes of success or failure (Colorado Parks and Wildlife 2014).

3.5.1 Effects of Alternative A: No Reintroduction

- Direct Effects: No reintroduction would result in no agency or partner requirements for monitoring.

- Indirect Effects: None.

3.5.2 Effects of Alternative B: Reintroduction of STGR to the Blackfoot Valley, Northern Bitterroot Valley, and Drummond Area

- Direct Effects: Reintroduction of STGR to the Blackfoot Valley, northern Bitterroot Valley, and the Drummond area would provide FWP with three reintroduction sites that could be monitored and compared over time to inform the project on potential sources of mortality. Each site has its own strengths and weaknesses. By monitoring three sites, one with optimum seasonal habitat scores (Blackfoot), and two with contrasting habitat scores (Drummond with better brood-rearing habitat and the Bitterroot with better nesting habitat), we would gain a better understanding of these seasonal habitat needs as well as other factors that could play a role in the long-term viability of reintroduced populations.

- Indirect Effects: Monitoring at three sites would provide the best information on factors limiting STGR populations and would help inform future restoration efforts throughout the bird's range.

3.5.3 Effects of Alternative C: Reintroduction of STGR to the Blackfoot Valley and the Northern Bitterroot Valley

- Direct Effects: Reintroduction of STGR to the Blackfoot Valley and the northern Bitterroot Valley or the Drummond area would provide FWP with two reintroduction sites that could be monitored and compared over time to inform the project on

potential sources of mortality. Each site has its own strengths and weaknesses. By monitoring these two sites, one with optimum seasonal habitat scores (Blackfoot), and one with good nesting habitat (Bitterroot), we would gain a better understanding of these seasonal habitat needs as well as other factors that could play a role in the long-term-viability of reintroduced populations.

- Indirect Effects: Monitoring of STGR in these two locations would allow us to compare the importance of brood-rearing habitat to the long-term viability of newly established STGR populations. It would not allow to compare the importance of nesting habitat suitability on reintroduction efforts.

3.5.4 Effects of Alternative D: Reintroduction of STGR to the Blackfoot Valley and the Drummond Area

- Direct Effects: Reintroduction of STGR to the Blackfoot Valley and the Drummond area would provide FWP with two reintroduction sites that could be monitored and compared over time to inform the project on potential sources of mortality. Each site has its own strengths and weaknesses. By monitoring these two sites, one with optimum nesting habitat scores (Blackfoot), and one with lower scores (Drummond), we would gain a better understanding of these seasonal habitat needs as well as other factors that could play a role in the long-term-viability of reintroduced populations.

- Indirect Effects: Monitoring of STGR in two locations would allow us to compare the importance of nesting habitat quality to the long-term viability of newly established STGR populations. It would not allow to compare the importance of brood-rearing habitat suitability on reintroduction efforts.

3.5.5 Effects of Alternative E: Reintroduction of STGR to the Blackfoot Valley

- Direct Effects: Reintroduction of STGR to the Blackfoot Valley would provide FWP with one reintroduction site and the best opportunity to restore STGR to western Montana. This site could be monitored over time and provide information should FWP examine reintroductions in other areas in the future.

- Indirect Effects: It would not provide a simultaneous comparison of the importance of brood-rearing habitat and nesting habitat to the long-term viability of newly established STGR populations.

3.6 Cumulative Impacts

Several environments and human factors influence STGR source populations and their habitat. Source populations are annually influenced by predation, hunting, disease and parasitism, collisions, habitat changes, and cultivation. Despite these factors, STGR source populations have remained stable likely due to large landscapes of suitable habitat. Removal of up to 150 STGR from source populations would be minor in comparison to all these other factors (less than 1% of the estimated 2017 harvest) (Figure 6). The reintroduction areas will likely experience similar sources of mortality with one notable exception, hunting. There has been no hunting for STGR in western Montana since 1948. The reestablishment of a hunting season would be subject to successful establishment of productive STGR populations and setting sustainable harvest levels by the Fish and Wildlife Commission which is beyond the scope of this EA. Reintroduced populations are expected to have little to no effect on existing resources. However, potential habitat restoration associated with reintroductions that assist the establishing STGR population will benefit several other wildlife species associated with quality shrub-steppe habitats.

Chapter 4.0: Resources Issues Considered but Eliminated from Detailed Analysis

4.1 Vegetation and Soils

FWP will only select capture/release sites accessible by four-wheel drive vehicles or all-terrain vehicles. Due to the timing of capture/release in the fall and spring during the non-growing season, minimal vegetation impacts are expected. FWP will avoid areas where topography, soils, and/or vegetation prevent vehicle access FWP or where vehicle use will increase soil erosion.

4.2 Recreational Resources

Removal of 75-150 STGR per year for 5 years following protocol outlined previously will not have negative effects on hunting harvest or limit recreational opportunities in FWP Regions with source populations because the collections can be spread across the 4 regions of central and eastern Montana. The effects of removing this number of STGR is negligible to the population when compared to annually occurring events, such as hunter harvest (Figure 6).

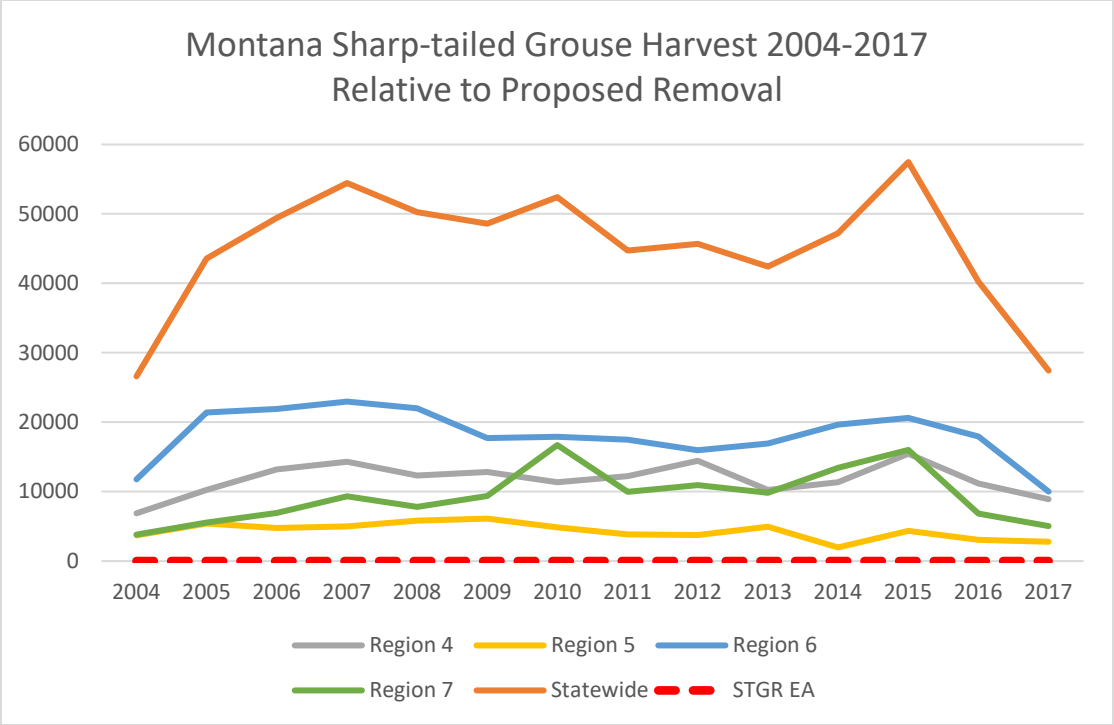

Figure 6. *Chart showing annual harvest of STGR statewide and in FWP Regions 4-7 from 2004-2017 from hunter harvest data relative to the maximum number of birds requested for STGR reintroduction.*

Chapter 5.0: Determination If an Environmental Impact Statement is Required

Based on the above assessment, which has not identified any significant negative impacts by the proposed action to Montana's STGR population, *an EIS is not required*, an EA is the appropriate level of review. The overall impact from the successful completion of any alternative presented would provide long-term benefits to both the physical and human environment.

Chapter 6.0: Public Participation and Collaborators

6.1 Public Involvement

The public will be notified in the following manners to comment on this draft EA, the proposed action, and the alternatives:

- Public notices in the *Daily Inter Lake, Bozeman Chronicle, Great Falls Tribune, Missoulian, Billings Gazette, The Glasgow Courier, Havre Daily News, Miles City Star, and the Helena Independent Record.*

- Public notice on the Fish, Wildlife & Parks' web page: *http://fwp.mt.gov*.
- Draft EAs will be available at Regional Headquarters across the state and at the State Headquarters in Helena.
- A news release will be prepared and distributed to a standard list of media outlets interested in FWP issues.

This level of public notice and participation is appropriate for a project of this scope, having limited impacts, many of which can be mitigated.

The public comment period will extend for 30 days. Written comments will be accepted until 5:00 p.m., March 17, 2019, and can be e-mailed to Chris Hammond at chammond@mt.gov, or mailed to the address below:

Chris Hammond
Sharp-tailed Reintroduction Environmental Assessment
Montana Fish, Wildlife & Parks
490 North Meridian Road
Kalispell, MT 59901

6.2 Collaborators and Scoping

An informal working group for the STGR reintroduction project has been in place since 2015. This group consists of federal, state, and tribal wildlife biologists, geneticists, wildlife program managers, NGOs, and private landowners. During the habitat evaluation, FWP and its partners (U.S. Fish & Wildlife Service, Confederated Salish and Kootenai Tribes, Big Sky Upland Game Bird Association, and MPG Ranch) worked with several large landowners and ranch managers who were generally supportive of these efforts. Although this project is to be led by FWP, the project will consult with members of the communities, interest groups, and agencies through the environmental assessment process, to incorporate comments, issues, and suggestions to the project proposal.

The following individuals provided helpful suggestions on the initial draft of the EA:

- Beau Larking, MPG Ranch
- Ben Deeble, Big Sky Upland Game Bird Association
- Catherine Wightman, FWP
- Dale Becker, CSKT
- Jake Doggett, FWP
- Kris Tempel, FWP
- John Ensign, FWP

- John Vore, FWP
- Kenneth Plourde, FWP
- Lewis Young, Retired USFS Biologist
- Scott Eggeman, FWP
- Scott Thompson, FWP

Recent project history:

1. FWP completed the habitat assessment in the spring and summer of 2015.
2. On May 12, 2016, the Fish and Wildlife Commission endorsed the development of a reintroduction plan and EA to re-establish self-sustaining STGR populations west of the Continental Divide in western Montana.
3. October 3-5, 2016, FWP provided information to Upland Gamebird Council regarding ongoing restoration efforts for STGR in western Montana. The agency received positive feedback on our efforts.
4. In May 2017, Montana State University completed the Restoration Plan for STGR Recovery in Western Montana for FWP.

6.3 Anticipated Timeline

Public Comment period on EA: February 15, 2019-March 17, 2019
Decision Notice Published: March 22, 2019
Fish and Wildlife Commission Final Decision: April 25, 2019
Potential Reintroduction of STGR to Begin: As early as fall 2019 or when we can secure funding for the duration of this 10-year project.

Chapter 7.0 EA Preparers

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